

# Exercise 5D

Note Title

03/12/2015

1a (2, 4) and (3, 8)

method 1 ① gradient ②  $y = mx + c$  ③ substitute & solve

$$\textcircled{1} \quad m = \frac{\Delta y}{\Delta x} = \frac{8-4}{3-2} = \frac{4}{1} = 4$$

$$\textcircled{2} \quad y = 4x + c$$

$$\textcircled{3} \quad 4 = 4(2) + c$$

$$4 = 8 + c$$

$$c = -4$$

$$y = 4x - 4.$$

method 2 uses  $y - y_1 = m(x - x_1)$

↑ general y-value      ↑ one particular value

① find m

② substitute

③ solve

$$\textcircled{1} \quad m = \frac{\Delta y}{\Delta x} = \frac{8-4}{3-2} = \frac{4}{1} = 4$$

$$\textcircled{2} \quad y - 8 = 4(x - 3)$$

(3, 8)  
↑  
 $x_1$     ↑  
 $y_1$

$$y - 8 = 4x - 12$$

$$y = 4x - 4.$$

method 3 use

$$\frac{y - y_1}{y_2 - y_1} = \frac{x - x_1}{x_2 - x_1}$$

$$\textcircled{1} \quad \frac{y - 4}{8 - 4} = \frac{x - 2}{3 - 2}$$

$$\left( \frac{y - 4}{4} = \frac{x - 2}{1} \right)$$

$$\begin{array}{ccc} x1 \times 4 & \searrow & \swarrow x1 \times 4 \\ & \Rightarrow y - 4 = 4(x - 2) & \end{array}$$

② tidy up  $y = 4x - 4$

16

 $(0, 2)$  $(3, 5)$ 

method ①

$$m = \frac{5-2}{3-0} = \frac{3}{3} = 1$$

$$y = 1x + c$$

$$2 = 1(0) + c$$

$$c = 2$$

$$y = x + 2$$

method

$$m = \frac{5-2}{3-0} = \frac{3}{3} = 1$$

$$y - 2 = 1(x - 0)$$

$$y - 2 = x$$

$$y = x + 2$$

method 3

$$\frac{y-2}{5-2} = \frac{x-0}{3-0}$$

$$\frac{y-2}{3} = \frac{x}{3}$$

$$y - 2 = x$$

$$y = x + 2$$

1c  $(-2, 0) \quad (2, 8)$

$$m = \frac{8-0}{2-(-2)} = \frac{8}{4} = 2$$

$$y = 2x + c$$

$$8 = 2(2) + c$$

$$c = 4$$

$$\text{so } y = 2x + 4$$

1d  $(5, -3) \quad (7, 5)$